# Supporting Information

# A Non-fullerene Acceptor as an Interfacial Modified

# Layer for Enhancing Efficiency and Stability of

### Inverted Perovskite Solar Cells

Genjie Yang<sup>#1</sup>, Shakil N. Afraj<sup>#2, 3</sup>, Jiawen Li<sup>1</sup>, Dayong Zhang<sup>1</sup>, Pu Fan<sup>4</sup>, Ming-Chou Chen<sup>3\*</sup>, Ding Zheng<sup>1\*</sup>, Junsheng Yu<sup>1\*</sup>

#### Affiliations:

<sup>1</sup>State Key Laboratory of Electronic Thin Films and Integrated Devices, School of Optoelectronic Science and Engineering, University of Electronic Science and Technology of China (UESTC), Chengdu, 610054, P. R. China
<sup>2</sup>Chemistry Department, National Central University, Taoyuan, Taiwan.
<sup>3</sup>Department of Chemistry and Advanced Materials Chemistry Centre (AMCC), Khalifa University, 127788 Abu Dhabi, United Arab Emirates
<sup>4</sup>Yangtze Delta Region Institute of University of Electronic Science and Technology of China, Huzhou (UESTCYDRI), Huzhou, 314099, P. R. China

### **Corresponding Author**

Ming-Chou Chen: mcchen@ncu.edu.tw

Ding Zheng: <u>dingzheng@uestc.edu.cn</u> Junsheng Yu: jsyu@uestc.edu.cn



Figure. S1 (a) J-V curves and (b) EQE spectra of PSCs with different IML thickness



Figure. S2 The distribution condition of each performance parameter of PSCs with different IML thickness



Figure. S3 XPS spectra of Cl 2p of perovskite films without and with NFA.

Devices	Jsc ( mA cm <sup>-2</sup> )	Voc (V)	FF (%)	PCE (%)
0	22.62	1.04	76.11	17.91
5 nm	22.89	1.06	77.83	18.88
7 nm	23.23	1.07	80.68	20.07
10 nm	22.01	1.02	74.73	16.77

Table S1 The photovoltaic parameters of PSCs with different IML thickness